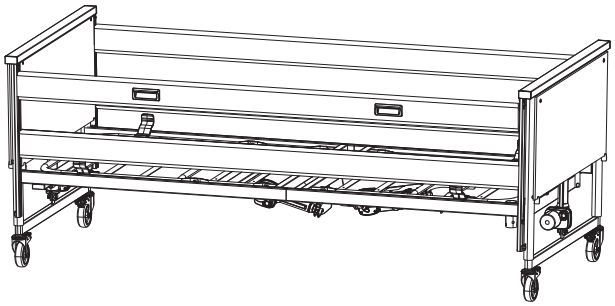
Invacare® Accent™



en **Bed**
User Manual

CE

This manual MUST be given to the user of the product.
BEFORE using this product, read this manual and save for future reference.

INVACARE®

Yes, you can.®

This bed has been tested and approved according to Nordic Requriments, adjustable beds for children.
This bed has been tested and approved according to IEC60601–2–52.
This bed has undergone a risk analysis according to EN ISO 14971.
Invacare is certified according to ISO 9001 and ISO 13485.

Contents

1 General

1.1 About this manual

This user manual contains important information about the handling of the product. In order to ensure safety when using the product, read the user manual carefully and follow the safety instructions.

All indications of right and left are based on a person lying on his back in the bed.

Please note that there may be sections in this user manual, which are not relevant to your product, since this manual applies to all existing modules (on the date of printing).

If a problem should arise in connection with the delivered product, please contact your *Invacare®* supplier. An address list is shown on the back side at this manual.

Symbols in this manual

In this user manual, warnings are indicated by symbols. The warning symbols are accompanied by a heading that indicates the severity of the danger.

WARNING
Indicates a hazardous situation that could result in serious injury or death if it is not avoided.

CAUTION
Indicates a hazardous situation that could result in minor or slight injury if it is not avoided.

IMPORTANT
Indicates a hazardous situation that could result in damage to property if it is not avoided.

Tips and Recommendations
Gives useful tips, recommendations and information for efficient, trouble-free use.

This product complies with Directive 93/42/EEC concerning medical devices. The launch date of this product is stated in the CE declaration of conformity.

1.2 Intended Use

- The bed has been developed for domestic and long term care.
- Min User Age: 12 years.
- Min User Height: 150 cm
- Min User Weight: 45 kg
- Max User Weight: 145 kg, (provided that the weight of the mattress and the accessories do not exceed 35 kg).
- Safe Working Load (SWL): 180 kg (user + accessories).
- The bed is not intended for psychiatric patients.
- The bed is mobile within a room, with a user in it, but is not intended for transportation of users.

The bed is defined to be used according to:

- *Application environment 3*; Long-term care in a medical area where medical supervision is required and monitoring is provided if necessary and medical electrical equipment used in medical procedures may be provided to help maintain or improve the condition of the patient.
- *Application environment 4*; Care provided in a domestic area where medical electrical equipment is used to alleviate or compensate for an injury, disability or disease.

WARNING!
Any other or incorrect use could lead to hazardous situations.
Invacare® accepts no liability for any use, change or assembly of the product other than as stated in this User manual.

If a problem should arise in connection with the delivered product, please contact your *Invacare®* supplier. An address list is shown on the back side at this manual.

1.3 Service life

The expected service life of this product is five years when used daily and in accordance with the safety instructions, maintenance intervals and correct use, stated in this manual. The effective service life can vary according to frequency and intensity of use.

1.4 Warranty

The warranty covers all material and production defects for two years from the date of delivery, provided it can be demonstrated that such defects were present before delivery. All manufacturing faults or defects must be promptly reported.

Invacare® may repair the fault or replace the component. The warranty provided by *Invacare®* does not cover additional costs (transport, packaging, labour, sundry expenses, etc. are for the customer's account).

The warranty does not cover:

- Damage caused during transport that is not directly reported to the forwarder at the moment of delivery.
- Repairs performed by unauthorized centers and personnel.
- Parts subject to normal wear.
- Malicious damages or damaged caused by improper use of the bed.

2 Safety

2.1 General warning

WARNING!
Risk of entrapment / suffocation
There's a risk of entrapment / suffocation between mattress support, side rail and bed end
– The bed must not be used by patients under 12 years of age, or by patients with body size equivalent to an average 12 years old or smaller.
– The bed, in combination with side rails must not be used for persons under 45 kg or under 150 cm height. Either for persons that are restless (spasms) or confused, unless a professional risk assessment has taken place and been accepted.

WARNING!
Risk due to electromagnetic interference
Electromagnetic interference between the bed and other electrical products can occur.
– To reduce or eliminate such electromagnetic interference, increase the distance between the bed and the products or switch them off.

This medical bed can be used together with medical electrical equipment connected to the heart (intracardially) or blood vessels (intravascularly) provided that following points are respected:
– The bed should be equipped with means for potential equalization connection marked out by a symbol shown in the back of this manual.
– Medical electrical equipment should not be fixed on the bed's metallic accessories such as side rails, lifting pole, drip rod, bed ends, etc.
– The medical electrical equipment power supply cord should be kept clear of the accessories or any other moving parts of the bed.

WARNING!
Risk of patients slipping through the openings
The bed fulfils all requirements regarding maximum distances. However, it is possible that patients with small body dimensions slip through the openings between the side rails or through the opening between the side rail and the mattress support.
– Pay special attention, if the bed is used for the care of patients with small body dimensions.

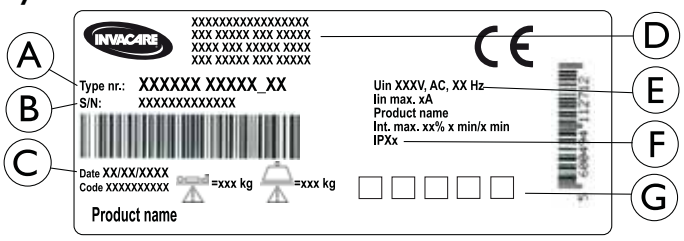
CAUTION!
Risk of injury
– Always lower the bed to the lowest position before leaving the patient in the bed unattended.
– Make sure that there is nothing under, over, or near the bed that can obstruct the height adjustment, like for example furniture, lifts or window frames.
– When entering or exiting the bed, use the height adjustment. Use the backrest as support. The thigh- and leg section must be horizontal, otherwise there is a risk of overloading the mattress support.
– There is a risk of entrapment of fingers in the bed moving parts. Pay attention to your fingers.

IMPORTANT!
– Do not roll over the mains cable. Do not bring mains cable into moving parts.
– Disconnect the plug from the mains before moving the bed.
– Make sure that no cables (mains or from other equipment) are jammed or damaged, when the bed is used.
– Do not place the bed close to a direct heat source (fire place, radiator etc.) and not in direct sunlight.

2.2 Labels and symbols on the product

The product label is placed on the frame of the bed:

Symbols on the label



Ⓐ	Type number of the bed
Ⓑ	Serial number
Ⓒ	Date of production
Ⓓ	Manufacturer; Name and Address
Ⓔ	Electrical information. See Chapter Technical Data.
Ⓕ	Degree of protection. See also Technical data.
Ⓖ	Symbols. See explanations in section; Symbols on the product.

Explanations to abbreviations on label			
Iin	Current in	Max	Maximum
Uin	Voltage in	min	minutes
Int.	Intermittency	kg	kilogram
AC	Alternating current	A	Ampere

Symbols on the product

All symbols might not be present on all products.

	Max. patient weight
	Max. safe working load
	CLASS II equipment
	Type B Applied Part.

	Potential equalization
	Refer to the user manual.
	Waste disposal and recycling information.
CE	This product complies with Directive 93/42/EEC concerning medical devices. The launch date of this product is stated in the CE declaration of conformity.

3 Setup

3.1 Receiving the bed

When you receive the bed, check the packaging. If the bed shows any signs of damage upon delivery, please read Section Warranty.

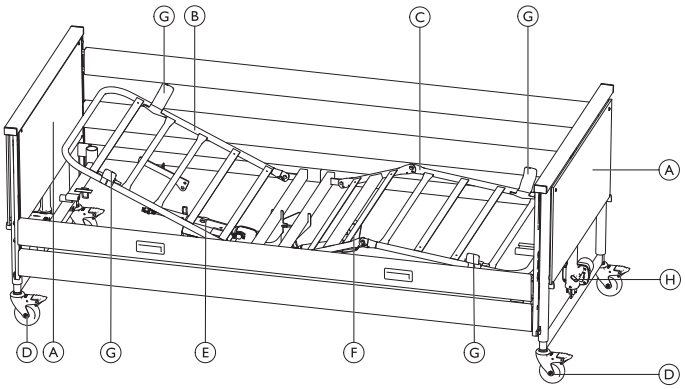
WARNING!
Risk of personal damage
There is a risk of entrapment or squeezing, while assembling or disassembling of the bed.
– The assembly of the bed and mounting of accessories must be done by authorized or trained personnel.
– Follow instructions carefully.

IMPORTANT!
– To avoid condensation the bed should not be used until it has reached a temperature of 10-40° C.

IMPORTANT!
– After each assembly, check that all fittings are properly tightened and that all parts have the correct function.

WARNING!
Only for beds with electrical equipment
– The electrical equipment of the bed must not be dismantled or combined with other electrical equipment.

3.2 Main parts of bed



Parts of standard bed:

Ⓐ	Bed ends, 2 pcs	Ⓔ	Motor, mattress support backrest
Ⓑ	Mattress support, upper half	Ⓕ	Motor, mattress support legrest
Ⓒ	Mattress support, lower half	Ⓖ	Mattress retainers, 4 pcs
Ⓓ	Castor, 4 pcs	Ⓗ	Motor, height adjustment
Not shown in image	Hand control		

Side rail is not delivered in the main configuration. See section Accessories for side rails and other options.

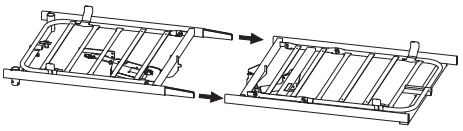
3.3 Assemble / Disassemble the bed

CAUTION!
Risk of pinching
– Make sure no fingers are pinched during assembly / disassembly of the bed.

IMPORTANT!
After assembly of the bed
– Tighten all screws
– Check that the mattress support is completely pushed together and attached with the thumb screws.
– Check that all parts are properly aligned with each other.
– Check that the bed is stable
– Check that all plugs of the motors and hand control are correctly connected to the control unit according to the printed symbols.

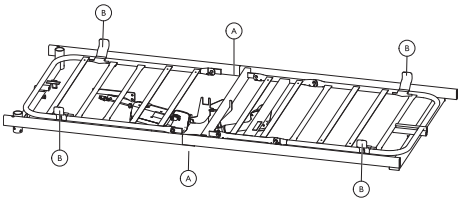
3.3.1 Assembly of mattress support

1.



Push the inserts on the upper half of the mattress support into the side tubes on the lower half of the mattress support.

2.



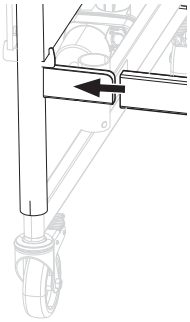
Tighten with the two thumb screws Ⓐ (one on each side).

3. Make sure that the four mattress retainers Ⓑ are positioned pointing upwards.

3.3.2 Mounting bed ends

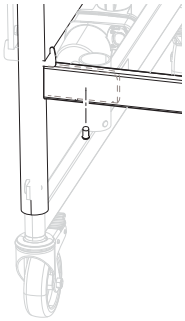
WARNING!
Risk of injury
If the mattress support is not properly mounted to the bed end attachments it might loosen while using the bed.
– Make sure the screws are properly tightened.

1.



Push the bed side tubes onto the bed end attachment. Make sure it is all the way in.

2.



Fasten the bed end side tubes with the screws and make sure they are properly tightened.

Allen key 5 mm

3. Repeat step 1–2 in every corner.

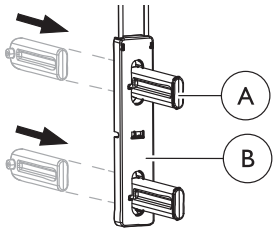
3.3.3 Side rail

WARNING!
Risk of personal damage
There is a risk of entrapment or squeezing, while assembling or disassembling the side rail.
– Follow instructions carefully.
– After assembly, check that the side rail has the correct function.

The installation of gliding system is identical for wooden and/or steel side rail.

Assembling the gliding system

1.

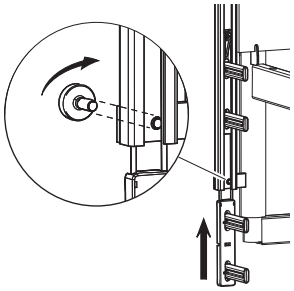


Push the pawl Ⓐ from the backside, through the glider Ⓑ and make sure it locks with an audible click.

2. Do the same for all four pawls in each glider.

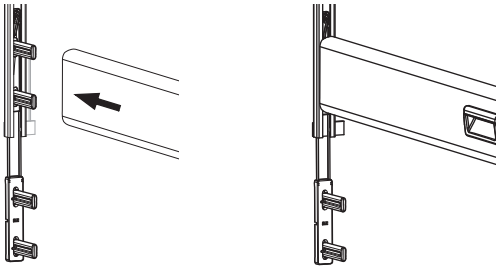
Attach the gliding system and installing the side rail

1. Raise the bed to 1/3 of full height.
2.



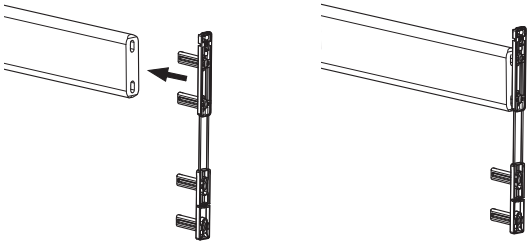
Loosen the screw at the bottom of the guides on one of the bed ends and push the glider halfway up into the guide until it attaches with an audible click.

3.



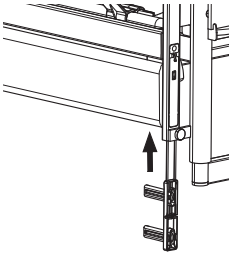
Push the upper side rail onto the two upper pawls.

4.



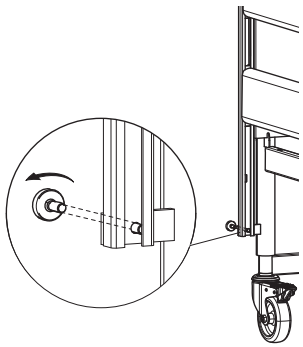
In the other end of the side rail bar; push the two upper pawls into the end of the bar.

5.



Push the attachment into the guide until it attaches with an audible click (=properly engaged in the lower position).

6. Mount the lower side rail bar in both ends as in step 4.

7. Push the side rail in both ends, all the way up until the upper bar locks in the upper position.
8. 

Retighten the screw under the lower side rail bar, in each corner of the bed ends.

Before taking the bed into use; Make sure that the side rail is properly locked with the screw and that the bars run smoothly.

3.3.4 Mattress retainers

WARNING!
Risk of injury
If the mattress retainers are removed the mattress will not follow the movement, when profiling the sections. The mattress can slip sideways and cause the user to fall out of the bed or get trapped in the bed.
– Always use mattress retainers and be careful to put them back after any adjustments.
– Always use the original type of retainers.
– After assembly of mattress support all four mattress retainers must point upwards.

3.4 Wiring

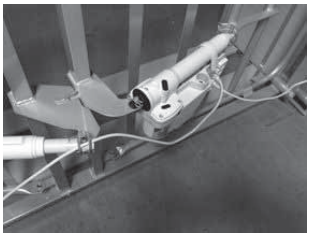
- The control box is placed underneath the upper half of the mattress support.
- The control box is provided with labels showing where to connect the different motor wires.

WARNING!
Wires damaged or torn apart could lead to personal injuries or death.
Follow instructions for wiring carefully to make sure there is no squeezing risk.
Before the bed is put into use:
– Check that the wires are attached to the top frame according to instructions.
– Check that the wires are kept clear of the floor and do not block the castors.
– Check the functions by operating the motors of the bed to their outer positions.
– Check that the wires are not being squeezed during operation of the functions.

IMPORTANT!
– The wires must be mounted in such a way that they are kept clear of the floor and do not block the castors.

- It is normal for wires to loosen slightly after short usage.

IMPORTANT!
The hand control, control unit and motors are protected according to IPX4.
– A lock cam must be used on the control box, if *Invacare*® is to guarantee the IP protection.

1. 

Connect both plugs from the hi/lo motors (head end and foot end) to the control box placed underneath the backrest.

2. 

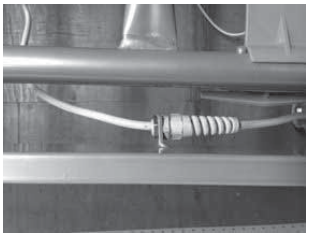
Guide the hi/lo motor wire from the bed foot end AND the wire from the thigh/leg section motor through the thigh/leg section motor pipe pin. Make sure the pipe pin is properly locked.
3. Connect the control box to the mains.
4. Run the thigh/leg section to its highest positions .
5. 

Place the wire hi/lo motor in the foot end on the hook at the bed end.
6. Run the backrest to its highest position
7. 

Place the wire from the hi/lo motor in the head end, on the two hooks at the bed end and attach the wire in the backrest motor pipe pin.
8. 

Install the safety clip over the plugs in the control box.

9.



Attach the mains wire in the strain relief that is attached to the bed frame.

10. Before taking the bed into use, check that all parts run smoothly and that no motor cables are hanging on the floor or being squeezed while moving bed sections.

4 Operating the bed

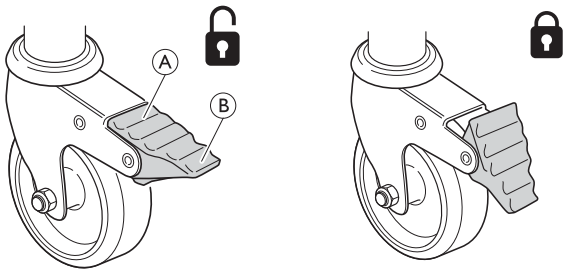
4.1 Castors and brakes

CAUTION!
Risk of trapping/squeezing
All brakes are foot-operated.
– Do not release the brake with the fingers.

CAUTION!
Risk of injury
User can fall, while entering or exiting the bed, if brakes are not locked.
– Always lock the brakes before the user is moving in or out of bed or when attending to the user.
– At least one castor at the head end and one castor in the foot end must be locked.

Castors might make marks on different types of absorbing floor surfaces - such as untreated or badly treated floors. To prevent marks, *Invacare*® recommends to place a suitable kind of protection between the castors and the floor.

4.1.1 Castor brake



Locking the brake - Step on the outer part Ⓑ of the brake pedal

Unlocking the brake - Step on the inner part Ⓐ of the brake pedal

4.2 Hand controls

WARNING!
Risk of personal injury and damage to property.
– The bed must be placed so that the height adjustment (up/down) is not obstructed by, for example, lifts or furniture.
– Take care that no body parts are being squeezed between fixed parts (such as side rails, bed ends etc) and moving parts.

WARNING!
Risk of injury
If the bed is used by confused or restless persons or persons with spasms:
– either, when the bed is equipped with a lockable hand control, lock the hand control functions.
– or make sure that the hand control is out of reach for the user.

4.2.1 Operating the hand control

WARNING!
Risk of fatal injury
Tilting function - tilting with head down, can have a fatal effect on users who are sensitive for increased blood pressure in the upper part of the body.
– Before using positions where the lower extremities are positioned higher than the heart, a medical evaluation has to be done.

Up / Down

Backrest

Thigh section

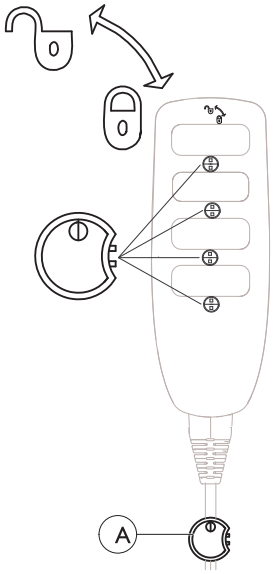
Height adjustment (hi/lo)

Tilt function:
Pressing the left side of the button tilts the bed with the head end up
Pressing the right side of the button tilts the bed with the foot end up

The tilt function is not available for all beds.

4.2.2 ACP - Locking function

The locking function (optional) prevents usage of certain function buttons. Regardless of how many buttons your hand control has, they can all be locked.



Insert the key Ⓐ , in the key hole, below the wanted function and turn it.

Lock

Turn the key Ⓐ clockwise.

Unlock

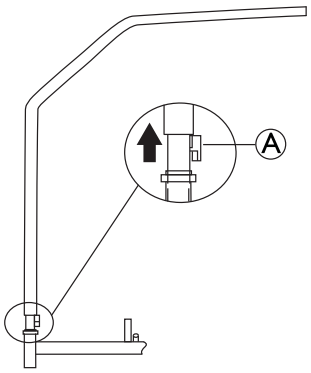
Turn the key Ⓐ anti clockwise.

4.3 Lifting pole

WARNING!
Risk of injury
The bed can tip if the handle is used, while the lifting pole is turned away from the bed.
– The lifting pole always has to be positioned with the handle hanging over the bed area.
– Do not exceed the maximum load of the lifting pole; 80 kg.

4.3.1 Positioning the lifting pole

1.

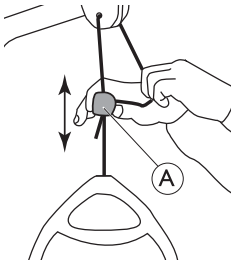


Lift the lifting pole until the control latch Ⓐ is released from the lifting pole tube.

2. Turn the lifting pole to the desired position.
3. Lower the lifting pole and fixate it.

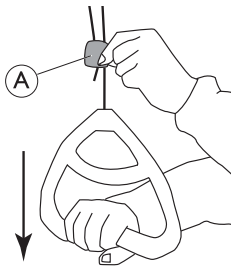
4.3.2 Changing the handle height

1.



Pull the cord out to the side, to release it from the cord lock Ⓐ .

2. Keep the cord out while sliding the plastic cord lock upwards or downwards until the handle reaches the preferred height.
3.



Lock the handle by pressing back the cord in the lock Ⓐ and pull the handle downwards.

IMPORTANT!
After adjustment of the lifting pole handle
– Check that the two cords above the cord lock, are parallel and inside the cord lock.
– Make sure the cord is properly locked by pulling the handle hard.

4.4 Emergency release of the backrest or thigh/leg section

An emergency release of the backrest or thigh/leg section could be necessary in the case of power- or motor failure.

CAUTION!
Risk of injury
– A minimum of two persons are required to release a mattress section.
– An emergency release of the height adjustment is NOT possible.
– Remove the plug from the mains socket before emergency release of the mattress support.

1. Both persons hold the mattress section.
2.

One of them pulls out the cotter pin (from the motor in question).

3. Both persons slowly lower the mattress section until it is completely down.

5 Accessories

5.1 List of available accessories

- Siderails
  - Bella
    Full length wood side rail (209 cm x 33 cm), mounted on the bed end rail. Release buttons in both ends.
  - Aria
    Full length steel side rail (209 cm x 33 cm), mounted on the bed end rail. Release buttons in both ends.
  - Scala Basic 2
    3/4 length collapsible steel side rail (168 cm x 40 cm), mounted on the side tube. Release button in the head section
  - Scala Basic Plus 2
    3/4 length collapsible steel side rail (168 cm x 40 cm), mounted on the side tube. Release button in the head section
  - Scala Medium 2
    3/4 length collapsible steel side rail (165 cm x 46 cm), mounted on the side tube. Release button in the head section
  - Scala Decubi 2
    3/4 length collapsible steel side rail (168 cm x 54 cm), mounted on the side tube. Release button in the head section
  - Verso II
    3/4 length collapsible steel side rail (156 cm x 40 cm), mounted on the side tube. Release button in the foot section
  - Diana
    3/4 length steel side rail (153 cm x 37 cm), mounted on the bed frame. Release buttons in both ends.
- Hand controls
  - Hand control HB 73
  - Hand control HB 74, with tilt
  - Hand control HL 73, with integrated ACP function
  - Hand control HL 74, with tilt and integrated ACP function
- Other accessories
  - Support handles (25x30, 25x80, 40x30, 40x50, 40x95)
  - Mattress retainers
  - Lifting pole

Important
– Use only original accessories and spare parts. Spare parts lists and extra user manuals can be ordered from *Invacare* or via homepage.

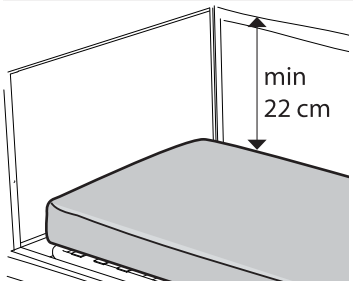
The tools necessary for mounting/dismounting the accessories of the bed are:

- one Allen key (use for mounting/dismounting all fittings)
- one adjustable spanner

5.2 Mattresses

WARNING!
Safety aspects regarding combination of side rails and mattresses:
To get the highest possible safety level, when using side rails on the bed, the minimum and maximum measures for mattresses, must be respected.
– For correct mattress measures see Technical Data.

WARNING!
Risk of entrapment and/or suffocation
– The user could get trapped and/or suffocate, if the horizontal space, between the mattress side and the inside of the side rail, is too big. For minimum width (and length) of mattresses in combination with a given side rail; see Technical Data.
– Be aware that using very thick or soft mattresses (low density), or a combination of these, increases the risk.



WARNING!
Risk of falling
The user can fall over the edge and get seriously injured, if the vertical distance, between the top of the mattress and the edge of the side rail/bed end, is too short.
– Always keep a minimum distance of 22 cm. For maximum mattress height in combination with a given side rail; see Technical Data.

6 Maintenance

6.1 Maintenance

A service contract can be made in the countries, where *Invacare*® has its own sales company. In certain countries Invacare® offers courses in service and maintenance of the bed. Spare parts lists and additional user manuals are available from *Invacare*®.

With normal daily use, service must be carried out according to the service schedule after two years use and thereafter every second year.

IMPORTANT!
– The mattress support must be supported during service inspections, to prevent accidental lowering.
– Only personnel who have received the necessary instructions or training may perform service and maintenance of the bed.
– After reconditioning the bed, or if bed functions change, service must be carried out according to the service schedule.

Before Use

- Ensure that all manual and electrical parts functions correctly and are in a secure state.

After three months

- Ensure that all manual and electrical parts are functioning, and tighten bolts, screws, nuts, etc.

Every year

- We recommend a safety test comprising the motors' performance and mechanical state.

Every second year

- Service should be performed after the maintenance chart.

Motors, hand control and control units are serviced by exchanging the faulty part.

6.1.1 Maintenance Chart

Service and maintenance of the bed must only be performed by personnel who have received the necessary instruction or training.					
S/N (located on mattress support):					
Date/Initials					
Visual inspection of all parts of the bed (plastic deformation and/or wear and tear of welded joints).					
Control of all centres of rotation (motors and mattress support parts).					
Check that all motors are running without failures (with regular speed and low noise).					
Visual inspection of all cabinets for damage.					
Check that the mains cable and plug are intact and not squeezed.					
Check that the remaining mains cable and plug are intact and not squeezed.					
Check the side rails (that they are fixed and that locking/movements are ok).					
Check the castors (security, locking, free rolling).					

6.2 Cleaning

Important
– The bed does not tolerate cleaning in automatic washing plants or the use of water-jet based cleaning equipment.
– Make sure that the power plug is removed from the main socket before cleaning.
– Make sure that all plugs on the bed are in place, during washing.

- The bed should be washed with a wet sponge, cloth or brush.
- Use ordinary household cleaning agents. Never use acids, alkalines or solvents such as acetone or cellulose thinner.
- The hand control, motors and control unit may be washed with brush and water.
- Dry the bed after cleaning.

6.3 Lubrication

We recommend lubricating the bed according to the following table:

Part of bed	Lubrication method
Points of rotation in mattress support and base frame	Oil
Motor attachment points on mattress support	Oil

7 After Use

7.1 Waste disposal

Waste disposal must comply with the laws and regulations pertaining waste handling in each country.

This product has been supplied from an environmentally aware manufacturer that complies with the Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU. This product may contain substances that could be harmful to the environment if disposed of in places (landfills) that are not appropriate according to legislation.

Please be environmentally responsible and recycle this product through your recycling facility at its end of life.

- All wooden parts must be dismantled and sent for incineration.
- All electric parts must be dismantled and be disposed of as electric components.
- Plastic parts must be sent for incineration or recycling.
- Steel parts and castors must be disposed of as waste metals.

8 Troubleshooting

8.1 Troubleshooting electrical system

Symptom	Possible cause	Remedy
Mains indicator does not light up	Mains are not connected	Connect mains
	Fuse in the control unit is blown	* Replace the control unit
	Control unit is defective	* Replace the control unit
Mains indicator lights up, but the motor is not running. The relay in the control unit makes a clicking noise.	Motor plug is not fully inserted into the control unit.	Insert the motor plug properly into the control unit
	The motor is defective.	* Replace the motor
	Motor cable is damaged.	* Replace the cable
	Control unit is defective	* Replace the control unit
Mains indicator lights up, but the motor is not running. No relay sound is heard from the control unit.	Control unit is defective	* Replace the control unit
	Hand control is defective	* Replace the hand control
Control unit is in order except for one direction on one channel.	Control unit is defective	* Replace the control unit
	Hand control is defective	* Replace the hand control
Motor is running, but the piston rod does not move.	Motor is damaged	* Replace the motor
The motor cannot lift full load.		
Motor noise, but no movement of piston rod.		
Piston rod operates inwards and not outwards.		
* Service and maintenance of the bed must only be performed by personnel who have received the necessary instruction or training..		

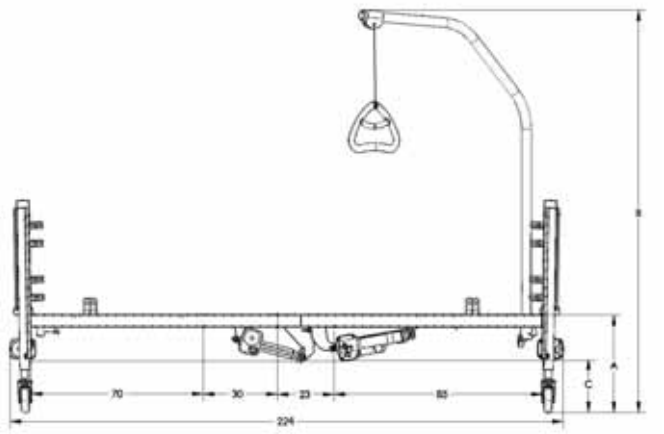
9 Technical data

9.1 Dimensions bed

All measurements are stated in cm. All angles are stated in degrees. All measurements and angles are stated without tolerances.

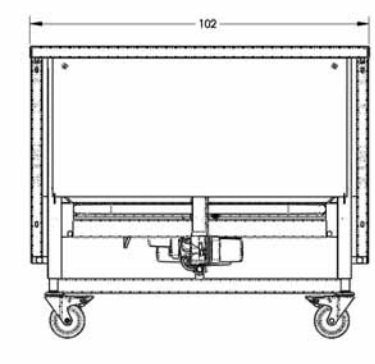
Invacare® reserves the right to change the stated measurements and angles.

Heights

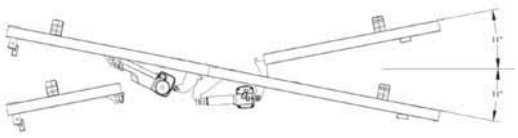


A Height from floor to upper side of mattress support	40 – 80 cm
B Height from floor to highest point on lifting pole	166 - 207 cm
C Height from floor to lowest point of the bed	22 - 62 cm

Width

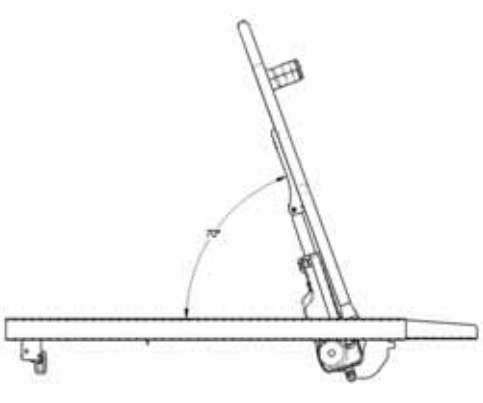


Tilt

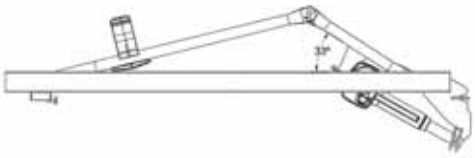


Can be tilted 11°

Angles



Can be tilted 70°



Can be tilted 33°

9.2 Weights

	Max. patient weight (provided that the weight of the mattress and the accessories do not exceed 35 kg)	145 kg
	Max. safe working load (patient + accessories)	180 kg

Complete bed, incl mattress support (upper and lower), steel slats, main cord, mattress retainers and hand control	74,0 kg
Upper part of mattress support, incl steel slats, main cord, mattress retainers and hand control	16,0 kg
Lower part of mattress support, incl steel slats and mattress retainers	16,7 kg
Bed ends (1 pair)	38,5 kg
Lifting pole	4,2 kg
Shipping brackets	2,0 kg

9.3 Dimension mattresses in combination with side rails

Side rail	Max height (cm)	Min height (cm)	Min width (cm)	Max width (cm)	Min length (cm)	Max length (cm)
Bella	16	10	90	85,5	195	208
Aria	16	10	90	85,5	195	208
Verso II	16	8	95	85,5	195	208
Scala Basic 2	16	10	90	85,5	195	208
Scala Basic Plus	16	10	90	85,5	195	208
Scala Medium	20	10	90	85,5	195	208

Scala Decubi 2	29	23	90	85,5	195	208
Diana	15	13	90	85,5	195	208

9.4 Electrical data

Voltage supply	Uin 230 Voltage, AC, 50 Hz (AC = Alternating current)
Maximum current input	Iin max.2 Ampere
Intermittent (periodic motor operation)	10 % 2 min / 18 min
Insulation class	⧈ CLASS II equipment
Type B Applied Part	Applied Part complying with the specified requirements for protection against electrical shock according to IEC60601-1. (An applied parts is a part of the medical equipment which is designed to come into physical contact with the patient or parts that are likely to be brought into contact with the patient.)

Sound level	45–50 dB
Degree of protection	The control unit, external power supply and motors are protected according to *IPX4.

*IPX4 classification means that the electrical system is protected against water splashed against the component from any direction.

The handcontrols have different IP-classes (see label on back), the IP-classification of the hand control decides the overall classification of the bed.

The bed has no isolator (main switch). Disconnect the bed by unplugging it from the mains socket.

9.5 Environmental conditions

	Storage and transportation	Operation
Temperature	-10°C to +50°C	+5°C to +40°C
Relative humidity	20% to 75%	
Atmospheric pressure	800 hPa to 1060 hPa	

Be aware that when a bed has been stored under low temperatures, it must be adjusted to operating conditions before use.

9.6 Electromagnetic compliance (EMC)

Guidance and manufacturer´s declaration – electromagnetic emission

The medical bed is intended for use in the electromagnetic environment specified below. The customer or the user of the bed should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11(partly)	Group I	The medical bed uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11(partly)	Class A	The medical bed is suitable for use in all establishments including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class B	
Voltage fluctuations /flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer´s declaration – electromagnetic immunity

The medical bed is intended for use in the electromagnetic environment specified below. The customer or the user of the bed should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment — guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode ± 2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.

Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5% U_T (>95% dip in U_T) for 0,5 cycle 40% U_T (60% dip in U_T)for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (>95% dip in U_T) for 5 sec	< 5% U_T (>95% dip in U_T) for 0,5 cycle 40% U_T (60% dip in U_T)for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (>95% dip in U_T) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the medical bed requires continued operation during power mains interruptions, it is recommended that the medical bed be powered from an un-interruptible power supply or a battery. U_T is the a. c. mains voltage prior to application of the test level.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 V 3 V/m	3 V 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the medical bed including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance: $d = [\frac{3,5}{V_1}]\sqrt{P}$ $d = [\frac{3,5}{E_1}]\sqrt{P}$ 80 MHz to 800 MHz $d = [\frac{7}{E_1}]\sqrt{P}$ 800 MHz to 2,5 GHz where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and *d* is the recommended separation distance in metres (m).[b] Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the medical bed is used exceeds the applicable RF compliance level above, the medical bed should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the medical bed.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [V1] V/m.

At 80 MHz and 800 MHz, the higher frequency range applies.

Recommended separation distances between portable and mobile RF communications equipment and the medical bed

The medical bed is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the medical bed can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the medical bed as recommended below, according to the maximum output power of the communications equipment

Rated maximum output of transmitter [W]	Separation distance according to frequency of transmitter [m]		
	150 kHz to 80 MHz $d = [\frac{3,5}{V_1}]\sqrt{P}$	**80 MHz to 800 MHz** $d = [\frac{3,5}{E_1}]\sqrt{P}$	**800 MHz to 2,5 GHz** $d = [\frac{7}{E_1}]\sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,37	0,37	0,74
1	1,17	1,17	2,33
10	3,69	3,69	7,38
100	11,67	11,67	23,33

For transmitters rated at a maximum output power not listed above the recommended separation, distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Notes

Notes

Notes

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